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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/718,241 | 11/22/2000 | Yu Wang | RD-27,500/USA | 8371 |

7590 02/26/2003
General Electric Company
CRD Patent Docket Rm 4A59
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P.O. Box 8
Schenectady, NY 12301

EXAMINER

PEREZ, GUILLERMO

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2834

DATE MAILED: 02/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/718,241

Applicant(s)

WANG ET AL.

Examiner

Guillermo Perez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-11 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-11 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 2, 2002 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-4 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tajima (U. S. Pat. 5,036,238).

Tajima discloses a rotor assembly comprising;

a rotor forging including a rotor body (8) having pole faces (1);

a winding module including a plurality of field windings (3) positioned adjacent the pole faces (1) and a winding insulator (7) disposed, respectively, between each pair of successive field windings (3), respectively; and

a winding block (5) disposed in engagement with the winding module (3), the winding block (5) disposed in engagement with the winding module (3) and is configured to be locked at a reference position to compress the winding module (3) when the rotor assembly rotates about its rated speed.

Tajima discloses that the winding block (5) comprises a tapered surface engaging the winding module (3).

Tajima discloses that the tapered surface friction coefficient locks the winding block (5) at a reference position to compress the winding module (3) when the rotor assembly rotates about its rated speed.

Tajima discloses that the winding block (5) is formed of a flexible insulating material.

It would have been obvious at the time the invention was made to know that the spring in Tajima was capable of adjusting the position of the winding block under external forces like centrifugal forces, thermal expansion and materials aging.

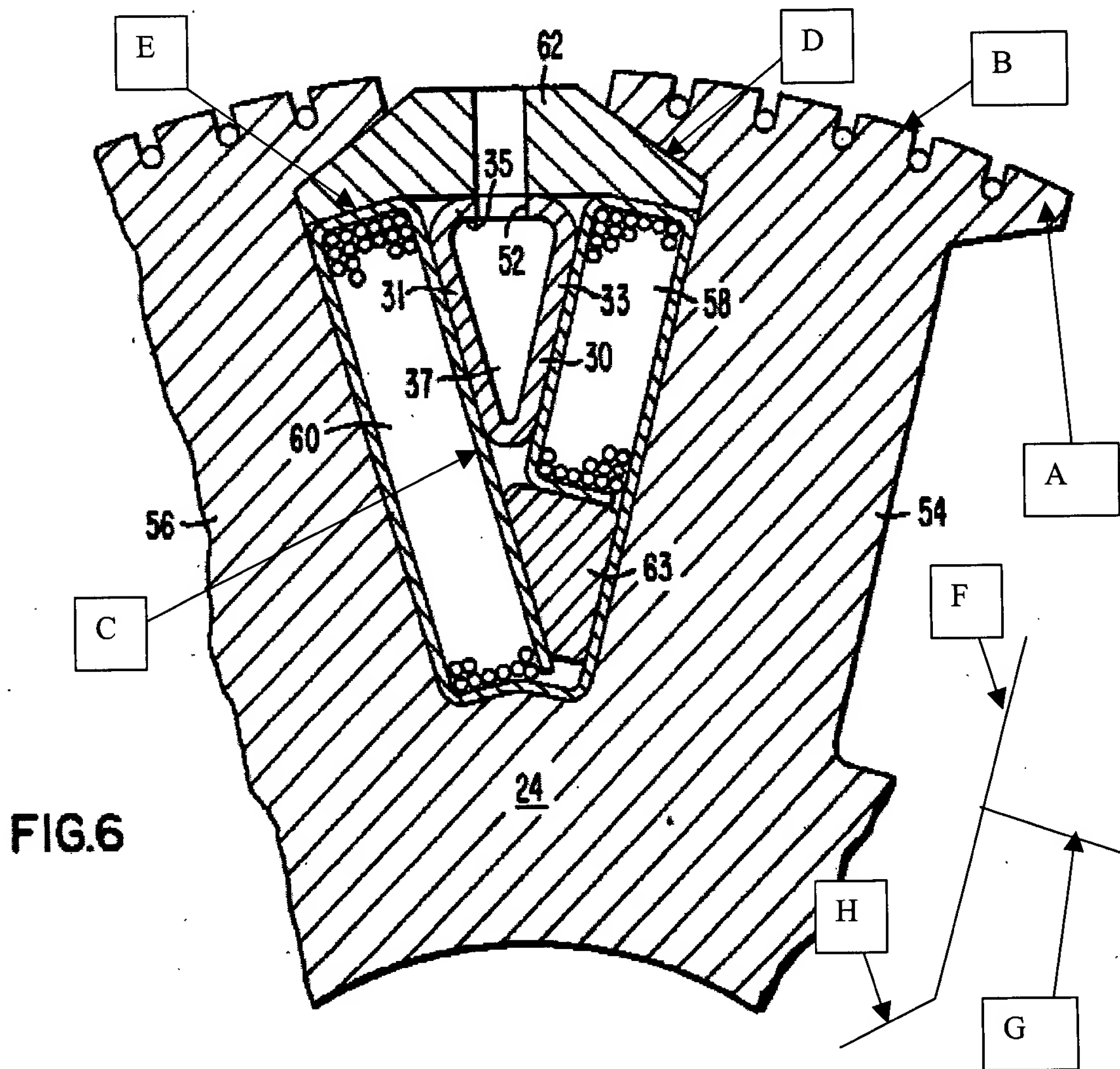
2. Claims 6-8, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCabria (U. S. Pat. 4,409,502).

McCabria discloses a multi-pole electric machine rotor assembly comprising:

a rotor forging including a rotor body (24) having poles (54,56) directed along a direct axis (F) with pole faces (B) extending generally perpendicularly to a direct axis (F), and fins (A) extending along a quadrature axis (G);

a winding module including a plurality of field windings (58,60) positioned in spaces between the pole faces (B) and the fins (A), and a winding insulator (C) disposed between each successive pair of the field windings (58,60), respectively; and

a winding block (62) disposed between the winding module (58,60) and a corresponding one of the fins (A) in each respective one of the spaces between the pole faces (B) and the fins (A).



McCabria discloses a multi-pole electric machine rotor assembly as described on item 1 above. McCabria discloses that the winding block (62) is detached from the fins (A) and the winding module (58,60). McCabria discloses that the winding block (62) comprises a support surface (D) engaging the corresponding one of the fins (A) and a tapered surface (E) engaging the winding module (58,60).

McCabria discloses that the winding block (62) comprises a support surface (D) engaging the corresponding one of the fins (A) and a tapered surface (E) engaging the winding module (58,60).

It would have been obvious at the time the invention was made to know that the winding block (62) was movably detached from its position since the winding block is an individual piece being pressed by centrifugal forces, which necessarily produce a displacement between of the block.

3. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCabria in view of Tajima.

McCabria discloses a multi-pole electric machine rotor assembly as described on item 3 above. However, McCabria does not disclose that the tapered surface angle locks the winding block at a reference position to compress the winding module when the rotor assembly rotates about its rated speed. McCabria does not disclose that the tapered surface friction coefficient locks the winding block at a reference position to compress the winding module when the rotor assembly rotates about its rated speed.

Tajima discloses that the tapered surface angle locks the winding block at a reference position to compress the winding module when the rotor assembly rotates

about its rated speed. Tajima discloses that the tapered surface friction coefficient locks the winding block at a reference position to compress the winding module when the rotor assembly rotates about its rated speed. Tajima's invention has the purpose of utilizing the restoring forces of the elastic members and thereby holding field coils without causing any great change in the holding forces thereof even against any type of a dimensional change.

It would have been obvious at the time the invention was made to modify the multi-pole electric machine rotor assembly of McCabria and provide it with the winding block configuration disclosed by Tajima for the purpose of utilizing the restoring forces of the elastic members and thereby holding field coils without causing any great change in the holding forces thereof even against any type of a dimensional change.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCabria in view of Kleemann (U. S. Pat. 5,015,904).

McCabria discloses a multi-pole electric machine rotor assembly as described on item 3 above. However, McCabria does not disclose that the winding block is formed of a flexible insulating material.

Kleemann discloses that the winding block (17) is formed of a flexible insulating material (column 2, lines 51-54). Kleemann's invention has the purpose of improving reliability and performance of the electric machine.

It would have been obvious at the time the invention was made to modify the multi-pole electric machine rotor assembly of McCabria and provide it with the winding

block material disclosed by Kleemann for the purpose of improving reliability and performance of the electric machine.

Response to Arguments

Applicant's arguments filed June 6, 2002 have been fully considered but they are not persuasive.

In response to Applicants remark that the claimed elements are arranged differently in the prior art, it must be noted that the elements in the references are arranged as described in Applicants claimed invention.

In response to Applicants remark that the claims have been treated as a mere catalog of separate parts, disregarding the part-to-part relationships set forth in the claims, it must be noted that the functional relationships as well as the structure have been given weight in the analysis and rejections presented. The functions claimed are directed to compressing forces on the windings by the blocks during rotation, due to centrifugal forces. The references applied are showing functions directed to compressing forces on the windings by the blocks during rotation, due to centrifugal forces.

Applicants claimed invention as a whole is being disclosed by the references of record.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "removable self-locking") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are

not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to Applicant's argument that Tajima and McCabria, include additional structure (i.e. a tightening arrangement for the blocks) not required by Applicant's invention, it must be noted that Tajima and McCabria disclose the invention as claimed. The fact that they disclose additional structure not claimed is irrelevant.

In response to Applicant's argument that the elastic members disclosed in Tajima cannot absorb the bending stress generated in the rotor material nor the bolts, it must be noted that the elastic members 9 are providing the adjustability to the blocks 5 to retain the windings 3 against movement due to external forces. Centrifugal forces are applied to all the elements of the rotor however, the claims are directed to control the movement of the windings by means of the windings blocks. Tajima presents the concept of controlling the movement of the windings by means of the windings blocks, as claimed.

In response to applicant's argument that neither McCabria nor Kleeman are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, McCabria discloses a rotor for a dynamoelectric machine, which is in the same field as the rotor for a dynamoelectric machine being claimed by the Applicants. McCabria is concerned with the provision of cooling means as well as

retaining means for the rotor windings. Kleeman is concerned with the provision of windings retaining means.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
February 23, 2003



GUILLERMO PEREZ
SUPERVISOR, ART UNIT 2834
FEBRUARY 23, 2003